

# CBCS SCHEME



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## Fourth Semester B.Arch. Degree Examination, Dec.2024/Jan.2025 Materials and Methods in Building Construction – IV

Time: 4 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.*

*2. Any missing data can be assumed suitably.*

*3. Use suitable scale to draft.*

### Module-1

- 1 Draw to the suitable scale, a flat slab and show following details:
- a. Plan showing top reinforcement of slab (05 Marks)
  - b. Plan showing bottom reinforcement of slab (05 Marks)
  - c. Plan showing drop panel reinforcement (05 Marks)
  - d. Section (05 Marks)

OR

- 2 a. Explain with sketches different types of flat slab. (10 Marks)
- b. Explain the difference between flat slab and regular RCC beam type slab. (10 Marks)

### Module-2

- 3 Explain the concept with the help of neat sketches for the following :
- a. Filler slab – construction method (10 Marks)
  - b. Waffle slab – construction method. (10 Marks)

OR

- 4 An exhibition room required to cast waffle slab supported on RCC column for a room of size 4000 × 8000mm clear and 3600mm in height to bottom of ribs. Draw the following with necessary details to suitable scale.
- a. Roof plan showing waffle units and its sizes (06 Marks)
  - b. Cross section of room with floor height show N (06 Marks)
  - c. Enlarged section of waffle slab system showing reinforcement detail. (08 Marks)

### Module-3

- 5 “Steel, is one of the most prevalent construction materials of the century.” Explain the types, properties, advantages and uses of steel in the construction industry. (20 Marks)

OR

- 6 Discuss the methods of assemblage of structural steel sections. Sketch the following connection detail:
- (i) Beam to beam connection
  - (ii) Beam to column connection (20 Marks)

### Module-4

- 7 Explain with neat sketches:
- a. Rolling shutters (10 Marks)
  - b. Collapsible gate (10 Marks)

OR

- 8 Draw plan, elevation and section of steel window of size  $1\text{m} \times 1\text{m}$ . (20 Marks)

**Module-5**

- 9 Explain aluminum as a building material with the help of neat sketched and briefly describe the importance of aluminum in building construction and its properties. (20 Marks)

OR

- 10 a. Draw plan, elevation, section to 1 : 10 scale of aluminum sliding window for an opening of size  $1200 \times 1350\text{mm}$ . (10 Marks)  
b. Draw any two joinery detail to 1 : 2 scale. (10 Marks)

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